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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/705,203	11/02/2000	Hsin-Hsin Chou	56073USA5A.002	4516

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EXAMINER	
KAO, CHIH CHENG G	
ART UNIT	**PAPER NUMBER**
2882	

DATE MAILED: 10/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/705,203	Applicant(s) CHOU ET AL.	
	Examiner Chih-Cheng Glen Kao	Art Unit 2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 July 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *4-22 and 25-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *4-22* is/are rejected.

7)☒ Claim(s) *25-28* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11/02/00 and 7/7/03* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☒ The proposed drawing correction filed on *7/7/03* is: a)☐ approved b)☒ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *14* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Information Disclosure Statement

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Drawings

2. The proposed drawings filed 7/7/03 have not been approved because they do not show a "plurality of independently operable light emitting devices disposed to emit light through the transmissive layer". These drawings remain objected to under 37 CFR 1.83(a), since the drawings must show every feature of the invention specified in the claims.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application.

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "plurality of independently operable light emitting devices disposed to emit light through the transmissive layer" of each claim, reflective louvers of claim 10, a first frustrator element having a plurality of prismatic microstructures and a second frustrator comprising a volume diffuser of claim 12 in one separate

figure, an antireflective element of claim 13, electroluminescent light emitting devices of claim 14, organic electroluminescent light emitting devices of claim 15, phosphor-based light emitting devices of claim 16, a first frustrator element having a plurality of parallel spaced-apart, V-shaped grooves, and a second frustrator comprising a volume diffuser of claim 22 in one separate figure, the microstructured surface directing light toward and around a desired viewing angle of claim 25 at a normal viewing axis of claim 26 or an off-normal viewing axis of claim 27, and a microstructured surface restricting viewing angles in one direction while not restricting viewing angles in another direction of claim 28 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance. Also note that drawings must not have modified forms of construction in the same view as detailed in 37 CFR 1.84(h)(5).

Claim Objections

4. Claims 4, 7, 8, 11, 13, and 22 are objected to for minor informalities, which appear to be minor draft errors creating grammatical or lack of antecedent basis problems: (claim 4, line 6, "light emitted the"), (claim 7, lines 1-2, "the repeating structures"), (claim 8, lines 6- 7, "light emitted the"), (claim 11, line 7, "light emitted the"), (claim 13, lines 1-2, "the frustrator element"), and (claim 22, lines 10-11, "the microstructures").

The following respective suggestions may obviate the objections above: (claim 4, line 6, inserting - -from- - after "emitted"), (claim 7, lines 1-2, replacing "the repeating structures

comprises a plurality of prismatic structures" with - -the plurality of prismatic microstructures are repeating structures- -), (claim 8, lines 6-7, inserting - -from- - after "emitted"), (claim 11, line 7, inserting - -from- - after "emitted"), (claim 13, lines 1-2, replacing "frustrator element" with - -volume diffuser- -), and (claim 22, lines 10-11, deleting "the').

For purposes of examination, the claims have been treated as such. Appropriate correction is required.

5. Claims 25-28 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to other claims in the alternative only. See MPEP § 608.01(n). Accordingly, the claims 25-28 have not been further treated on the merits.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 4, 5, 16, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arai et al. (US Patent 6275338) in view of Evanicky et al. (US Patent 6611249).

7. With regards to claim 4, Arai et al. discloses a display (col. 1, lines 15-16) comprising a light emitting device (Fig. 1, #2) to emit light through a transmissive layer (Fig. 1, #1, or Fig. 6, #3), and a volume diffuser (Fig. 1, #5) receiving light from the light emitting device (col. 4, lines

38-45) and frustrating total internal reflections (inherent), wherein the diffuser comprises voids in a material (col. 4, lines 48-50).

However, Arai et al. does not disclose a plurality of independently operable light emitting devices.

Evanicky et al. teaches a plurality of independently operable light emitting devices (Fig. 3, #132 and 136).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have the modify the device of Arai et al. with the lights of Evanicky et al., since one would be motivated to have this modification for white balance adjustment (col. 7, line 66, to col. 8, line 3) as shown by Evanicky et al.

8. With regards to claim 5, Arai et al. further discloses a diffusive surface oriented towards the transmissive layer (Fig. 6, #5).

9. With regards to claim 16, Arai et al. in view of Evanicky et al. suggests a device as recited above.

However, Arai et al. does not disclose phosphor-based light emitting devices.

Evanicky et al. teaches phosphor-based light emitting devices (col. 9, lines 64-67).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the device of Arai et al. in view of Evanicky et al. with the phosphor-based devices, since one would be motivated to incorporate them to create a white balance and brightness that may be adjustable (col. 9, line 60, to col. 10, line 4) as shown by

Evanicky et al. Secondly, these light-emitting devices are considered art-recognized equivalents in that they both illuminate displays. It would have been within routine skill in the art to substitute one for another.

10. With regards to claim 18, Arai et al. further discloses the diffuser between the light emitting device and transmissive layer (Fig. 6, #5).

11. With regards to claim 19, Arai et al. further discloses the diffuser between the transmissive layer and a viewer position (Fig. 6, #5).

12. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arai et al. in view of Evanicky et al. as applied to claim 4 above, and further in view of Suzuki et al. (US Patent 5600462).

Arai et al. in view of Evanicky et al. suggest a device as recited above.

However, Arai et al. does not disclose a microstuctured surface orientated toward a transmissive layer.

Suzuki et al. teaches a microstuctured surface orientated toward a transmissive layer (Fig. 4, #9).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the device of Arai et al. in view of Evanicky et al. with the surface of Suzuki et al., since one would be motivated to incorporate the surface to provide diffusion of light (Figs. 3-5) as shown by Suzuki et al.

13. Claims 8, 9, 20, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maruyama et al. (US Patent 5557433) in view of Pichler (US Patent 5929562).

14. With regards to claim 8, Maruyama et al. discloses an information display (Title) comprising a light emitting device (Fig. 14a, #1) emitting light through a transmissive layer (Fig. 14a, #2 or 4), and a volume diffuser frustrating total internal reflection (Fig. 14a, spaces between lines of #3) and a plurality of louvers to inhibit cross-talking (Fig. 14a, lines of #3).

However, Maruyama et al. does not disclose a plurality of independently operable light emitting devices.

Pichler teaches a plurality of independently operable light emitting devices (Abstract).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have to modify the device of Maruyama et al. with the light emitting devices of Pichler, since one would be motivated to incorporate these lights to make multi-color or true RGB emissive displays (col. 1, lines 9-15) as shown by Pichler.

15. With regards to claim 9, Maruyama et al. further discloses the louvers primarily absorbing (col. 6, lines 46-50).

16. With regards to claim 20, Maruyama et al. further discloses the volume diffuser (Fig. 14a, #3) between the light (Fig. 14a, #1) and transmissive layer (Fig. 14a, #4).

17. With regards to claim 21, Maruyama et al. further discloses the volume diffuser (Fig. 14a, #3) between the transmissive layer (Fig. 14a, #2) and a viewer position (right side of Figure 14a).

18. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maruyama et al. in view of Pichler as applied to claim 8 above, and further in view of Tokas (US Patent 5104210).

Maruyama et al. in view of Pichler suggests a device as recited above.

However, Maruyama et al. does not disclose louvers primarily reflective.

Tokas teaches louvers primarily reflective (col. 2, lines 24-27).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the device of Maruyama et al. in view of Pichler with the reflective louvers of Tokas, since reflective and absorbing louvers are considered art-recognized equivalents as shown by Tokas (col. 2, lines 24-27). It would have been within routine skill in the art to substitute one for another. One would be motivated to incorporate reflective louvers for controlling light as shown by Tokas (col. 2, lines 24-27).

19. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. in view of Evanicky et al.

Suzuki et al. discloses an information display (Fig. 3) comprising a transmissive layer (Fig. 3, #8), a light emitting device (Fig. 3, #7), and a frustrator element comprising a surface diffuser (Fig. 3, #9), wherein the transmissive layer (Fig. 3, #8) is disposed between the frustrator element (Fig. 3, #9) and the light emitting device (Fig. 3, #7).

However, Suzuki et al. does not disclose a plurality of independently operable light emitting devices.

Evanicky et al. teaches a plurality of independently operable light emitting devices (Fig. 3, #132 and 136).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the device of Suzuki et al. with the lights of Evanicky et al., since one would be motivated to have this modification for white balance adjustment (col. 7, line 66, to col. 8, line 3) as shown by Evanicky et al.

20. Claims 7, 12, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. in view of Arai et al. and Evanicky et al.

Suzuki et al. discloses an information display (Fig. 3) comprising a transmissive layer (Fig. 3, layer below #9), a light emitting device (Fig. 3, #7), and a first frustrator element having a surface comprising a plurality of repeating prismatic microstructures or a plurality of parallel, spaced-apart, V-shaped grooves (Fig. 3-5, #9) frustrating total internal reflection (inherent) and facing the viewer (top of Fig. 3).

However, Suzuki et al. does not disclose a plurality of independently operable light emitting devices or a second frustrator comprising a volume diffuser frustrating total internal reflections between the surface and the transmissive layer.

Evanicky et al. teaches a plurality of independently operable light emitting devices (Fig. 3, #132 and 136). Arai et al. teaches a second frustrator comprising a volume diffuser (Fig. 6,

#5a) frustrating total internal reflections (inherent) between the surface (Fig. 6, surface of #5) and the transmissive layer (Fig. 6, layer below #5).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have the modify the device of Suzuki et al. with the lights of Evanicky et al., since one would be motivated to have this modification for white balance adjustment (col. 7, line 66, to col. 8, line 3) as shown by Evanicky et al.

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the device of Suzuki et al. with the second frustrator of Arai et al., since one would be motivated to incorporate this for more diffusion of light (col. 5, lines 25-30) as implied from Arai et al.

21. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arai et al. in view of Evanicky et al. as applied to claim 4 above, and further in view of Abileah et al. (US Patent 5629784).

Arai et al. in view of Evanicky et al. suggest a device as recited above.

However, Arai et al. does not disclose an antireflective element.

Abileah et al. teaches an antireflective element (col. 14, lines 16-27).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the device of Arai et al. in view of Evanicky et al. with the antireflective element of Abileah et al., since one would be motivated to incorporate this element to decrease the ambient light reflection of the display panel (col. 14, lines 16-27) as shown by Abileah et al.

22. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arai et al. in view of Evanicky et al. as applied to claim 4 above, and further in view of Beeteson (US Patent 5796382).

Arai et al. in view of Evanicky et al. suggest a device as recited above.

However, Arai et al. does not disclose electroluminescent light emitting devices.

Beeteson teaches electroluminescent light emitting devices (col. 2, lines 44-47).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the device of Arai et al. in view of Evanicky et al. with the electroluminescent devices of Beeteson, since various light emitting devices are art-recognized equivalents shown by Beeteson (col. 2, lines 44-47). It would have been within routine skill in the art to substitute one for another. One would be motivated to incorporate an electroluminescent device to provide light to an LCD panel (col. 2, lines 37-47) as shown by Beeteson.

23. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arai et al. in view of Evanicky et al. as applied to claim 4 above, and further in view of Pichler.

Arai et al. in view of Evanicky et al. suggest a device as recited above.

However, Arai et al. does not disclose organic electroluminescent light emitting devices.

Pichler teaches organic electroluminescent light emitting devices (Abstract).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the device of Arai et al. in view of Evanicky et al. with the

electroluminescent devices of Pichler, since these devices are art-recognized equivalents in that they are used as backlights for displays. It would have been within routine skill in the art to substitute one for another. One would be motivated to incorporate organic electroluminescent devices to make multi-color or true RGV emissive displays (col. 1, lines 9-15) as shown by Pichler.

24. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arai et al. in view of Evanicky et al. as applied to claim 4 above, and further in view of Pichler and Winston et al. (US Patent 5594830).

Arai et al. in view of Evanicky et al. suggest a device as recited above.

However, Arai et al. does not disclose a prismatic film disposed on a side of the layer opposing the light emitting devices.

Pichler teaches light emitting devices on a side (Fig. 3a). Winston et al. teaches a prismatic film (Fig. 28D, #282) on a layer opposing a side.

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the device of Arai et al. in view of Evanicky et al. with the light sources of Pichler, since the light sources of Pichler, Arai et al., and Evanicky et al. are art-recognized equivalents in that they are all used as sources of backlight. It would have been within routine skill in the art to substitute one for the other. One would be motivated to incorporate these light sources to make multi-color or true RGB emissive displays (col. 1, lines 9-15) as shown by Pichler.

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the device of Arai et al. in view of Evanicky et al. and Pichler with the film of Winston et al., since one would be motivated to incorporate it for redirecting light from the light emitting devices (col. 39, lines 19-31) as shown by Winston et al.

Response to Arguments

25. Applicant's arguments with respect to claims 4-22 have been considered but are moot in view of the new ground(s) of rejection.

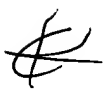
26. With regards to Arai et al., Figure 6, and a diffuser, please refer to US Patent 6275338.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Cheng Glen Kao whose telephone number is (703) 605-5298. The examiner can normally be reached on M - F (9 am to 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (703) 308-4858. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



DAVID V. BRUCE
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